

ABSTRACT

The main objective: The main objective of this thesis is to provide a comprehensive summary of existing knowledge about the effect of high-heeled shoes on the musculoskeletal system and to determine the context between this type of footwear and knee osteoarthritis through a systematic review of biomechanical and epidemiological studies dealing with this problematics.

Methods: Keywords in the form of search query were searched in bibliographic databases. The target group was formed by biomechanical and epidemiological studies or their reviews and meta-analyses dealing with the relationship between wearing high-heeled shoes and knee osteoarthritis. The PRISMA method, including the flow diagram, was used to clarify and categorize the data.

Results: Biomechanical publications show that wearing high-heeled shoes leads to kinetic and kinematic changes of the knee joint, especially during walking. The most significant and most frequently observed changes are the varus/adduction and flexion moment and the increased angle of flexion of the knee joint during the stance phase of walking. Current epidemiological studies on this issue are inconsistent, with 2 studies not confirming the link between wearing high-heeled shoes and osteoarthritis of the knee. In contrast, 3 studies report a positive relationship, which they attribute to the biomechanical changes found in biomechanical studies.

Conclusion: Based on the results, changes in the biomechanics of the knee joint during walking in high-heeled footwear, which are associated with degenerative changes in the knee cartilage, can be clearly confirmed. The results of epidemiological studies remain contradictory, although more recent studies show a positive relationship between wearing high-heeled shoes and osteoarthritis of the knee joint, compared to older studies with considerable limitations. Thus, a positive correlation can be expected between the results of biomechanical and epidemiological studies, but for a full and undoubted understanding of this issue, publishing further, preferably prospective, cross-sectional, or longitudinal studies with a larger research sample is needed.

Keywords: high heels, high-heeled shoes, knee osteoarthritis, gonarthrosis